

APPENDIX - CLAIMS

1. (Previously Presented) A method comprising forming an admixture of
a solvent,
an additive and
a polymer selected from the group consisting of a precursor to an electrically conductive polymer
and an electrically conductive polymer,
said polymer being soluble in said solvent,
said polymer not being substantially soluble in said additive in the absence of said solvent;
said additive provides local mobility to said polymer to allow said polymer to associate with one
another to achieve a crystalline state; and
removing or partly removing said solvent, substantially leaving said additive therein as remaining
additive, said remaining additive provides local mobility to said polymer to achieve said
crystalline state thereby comprising a polycrystalline material, said polycrystalline material is
characterized by a degree of crystallinity regions and
a degree of amorphous regions, said degree of crystallinity regions and said degree of
amorphous regions are selected by selecting the composition of said additive, and the amount of
said additive.
2. (Previously Presented) A method according to claim 1, wherein said admixture is
electrically conductive and has an isotropic electrical conductivity.
3. (Previously Presented) A method according to claim 1, wherein said additive is selected
from the group consisting of plasticizers and diluents.

4. (Currently Amended) A method according to claim 1, wherein said additive is a plasticizer is selected from the group consisting of: Adipic acid plasticizers, Azelaic acid plasticizers, Benzoic acid plasticizers, Citric acid plasticizers, Dimer acid plasticizers, Epoxy plasticizers, Fumaric acid plasticizers, Glycerol plasticizers, Isobutyrate plasticizers, Lauric acid plasticizers, Linoleic acid plasticizers, Maleic acid plasticizers, Sebacic acid plasticizers, Stearic acid plasticizers, Succinic acid plasticizers, Sulfonic acid plasticizers, Terpentines, Terpentine plasticizers, Siloxanes, Polysiloxanes, Ethylene glycols, Polyethylene glycols, Polyesters, Sucrose plasticizers, Mellitates, Myristic acid plasticizers, Oleic acid plasticizers, Palmitic acid plasticizers, Paraffin plasticizers, Phosphoric acid plasticizers, Phthalic acid plasticizers, Ricinoleic acid plasticizers, Tartaric acid plasticizers, Trimellitic acid plasticizers, Glycol plasticizers, Glycolates, Hydrocarbons, Phosphonic acid plasticizers, Polysilanes.

5. (Previously Presented) A method according to claim 1, wherein said polymer is selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polyparaphenylenes, polyanilines, polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes, poly-p-phenylene sulfides, polyacetylenes formed from soluble precursors, combinations thereof and blends thereof with other polymers and copolymers of the monomers thereof.

6. (Previously Presented) A method according to claim 1, wherein said, solvent when removed or partly removed forms a film which is further stretch oriented.

7. (Previously Presented) A method comprising:

forming a combination of a first material, a second material and a solvent:

said first material is selected from the group consisting of a precursors to an electrically conductive polymer and an electrically conductive polymer;

said second material being soluble in said solvent, said second material not being substantially soluble in said first material in the absence of said solvent.

8. (Previously Presented) A method according to claim 7, wherein said combination is electrically conductive and has a conductivity which is isotropic.

9. (Currently amended) A method according to claim 7, wherein said polymer is selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polythianophthenes, polyparaphenylenes, polyanilines, polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes, poly-p-phenylene sulfides, polyacetylenes formed from soluble precursors, combinations thereof and blends thereof with other polymers and copolymers of the monomers thereof.

10. (Currently amended) A method according to claim 7, wherein said second material is selected from the group consisting of:

Adipic acid plasticizers, Azelaic acid plasticizers, Benzoic acid plasticizers, Citric acid plasticizers, Dimer acid plasticizers, Epoxy plasticizers, Fumaric acid plasticizers, Glycerol plasticizers, Isobutyrate plasticizers, Lauric acid plasticizers, Linoleic acid plasticizers, Maleic acid plasticizers, Sebacic acid plasticizers, Stearic acid plasticizers, Succinic acid plasticizers, Sulfonic acid plasticizers, Terpentines, Terpentine plasticizers, Siloxanes, Polysiloxanes, Ethylene glycols, Polyethylene glycols,

Polyesters, Sucrose plasticizers, Myristic acid plasticizers, Oleic acid plasticizers, Palmitic acid plasticizers, Paraffin plasticizers, Phosphoric acid plasticizers, Phthalic acid plasticizers, Ricinoleic acid plasticizers, Tartaric acid plasticizers, Trimellitic acid plasticizers, Glycol plasticizers, Glycolates, Hydrocarbons, Phosphonic acid plasticizers, Polysilanes.

11. (Previously presented) A method comprising forming a polyaniline material having at least one crystal grain, said material having isotropic electrical conductivity.

12. (Previously presented) A method comprising:
providing solution of polymers in a solvent;
said polymers are selected from the group consisting of precursors to electrically
conductive polymers and electrically conductive polymers;
providing mobility to said polymers to allow said polymers to associate with one another
to achieve a crystalline state by adding a plasticizer to said solvent;
said plasticizer being soluble in said solvent. said plasticizer not being substantially soluble in said
polymer in the absence of said solvent.
13. (Previously Presented) A method according to claim 12, wherein said step of providing
mobility is provided by adding an additive to said solution.
14. (Previously Presented) A method according to claim 13, wherein solid additive is
selected from the group consisting of a plasticizer and a diluent.
15. (Previously Presented) A method according to claim 1, wherein said additive contains
substituents which facilitates the miscibility of said polymer and said additive.
16. (Previously Presented) A method according to claim 1, wherein said additive disrupts
aggregation of said polymer.
17. - 19 (Cancelled)
20. (Previously Presented) A method according to claim 1, wherein said additive deaggregates said polymer.
21. (Cancelled)
22. (Previously Presented) A method according to claim 1, wherein said solvent is extracted from
said admixture by a technique selected from the group consisting of solvent extraction and evaporation.

23. (Previously Presented) A method according to claim 1, wherein said additive is first added to a solvent and thereafter an electrically conducting polyaniline is added which becomes neutralized upon addition to said admixture.

24. (Currently Amended) A method according to claim 1, wherein said admixture contains ~~an~~ a polyaniline ~~monomer~~, said additive, and an oxidant.

25. (Previously Presented) A method according to Claim 1, wherein said additive includes a plasticization effect.

26 - 39 (Cancelled)

40. (Previously Presented) A method according to claim 1 wherein said additive is an oxidant.

41. (Previously Presented) A method according to claim 7 wherein said material is an oxidant.

42. (Previously Presented) A method according to claim 12 wherein said plasticizer is an oxidant.

43. - 45. (Cancelled)